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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,097	08/18/2003	Warren B. Linton	71024-023	3347

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EXAMINER
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BECK, DAVID THOMAS

ART UNIT	PAPER NUMBER
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1732

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/643,097

Applicant(s)

LINETON, WARRAN B.

Examiner

David T. Beck

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Double Patenting*

1. The double patenting rejection has been overcome by the filing of a terminal disclaimer.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams et al (4,375,441) in view of Hori et al (6,270,707).

With regard to claim 1, Adams et al discloses a method of fabricating porous polymeric articles (abstract) comprising: feeding the mixture into a compaction zone to at least partially compact and shape the mixture (column 9, lines 25-44), providing a continuous flow of the mixture from the compaction zone to a heating zone (column 9, lines 44-47) and heating and sintering the mixture within the heating zone by exciting the susceptor material by application of wave energy (column 9, lines 44-47 and column 3, lines 12-14) but does not expressly disclose preparing a mixture of PTFE resin powder and a susceptor material. Hori et al discloses preparing a mixture of PTFE resin powder and a susceptor material (column 1, lines 18-22, graphite is a susceptor material). Hori et al and Adams et al are analogous art because they both deal with the technical challenge of compacting and shaping polymeric material through ram

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extrusion with subsequent steps of sintering to form a polymer article. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the starting materials of Hori et al in the process of Adams et al. The motivation to do so would have been to create a PTFE sheet with good mechanical strength and conductivity (Hori et al, column 5, lines 37–40).

With regard to claim 5, Adams et al teaches cutting the PTFE material while the mixture is at a temperature below a sintering temperature within the heating zone but above ambient temperature (column 9, lines 62-67, Adams et al states that the distance between the oven and takeoff permits adequate cooling, which indicates a range between ambient temperature and sintering temperature).

With regard to claim 6, Hori et al teaches that the mixture is compacted into a generally tubular form (Figure 2, number 32).

With regard to claim 7, Adams et al teaches that the mixture is heated by microwave energy (column 3, lines 12-14).

With regard to claim 8, Adams et al teaches a method of fabricating porous polymeric articles, comprising: compacting the mixture (column 9, lines 25-44); and sintering the mixture by exciting the susceptor material with microwave energy (column 9, lines 44-47 and column 3, lines 12-14). Hori et al discloses preparing a mixture of PTFE resin powder and a susceptor material (column 1, lines 18-22).

4. Claims 2-4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams et al (4,375,441) in view of Hori et al (6,270,707) and Eucker et al (5,227,105).

With regard to claim 2, Adams et al in view of Hori et al teaches the invention of claim 1, but does not teach drawing a vacuum on the mixture within the heating zone to extract air from the mixture. Eucker et al teaches drawing a vacuum on the mixture within the heating zone to extract air from the mixture (column 3, lines 8-10 and column 3, lines 53-57). Eucker et al, Adams et al and Hori et al are analogous art because they all deal with the technical challenge of shaping particulate matter into a form through ram extrusion with subsequent sintering steps to create a finished article. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to draw a vacuum on the heating steps as taught by Eucker et al in the process taught by Adams et al. The motivation to do so would have been to remove volatiles from inside the tube (Eucker et al, column 3, lines 53-57).

With regard to claim 3, Adams et al teaches that the heating zone has an initial stage for preheating and finishing compaction of the mixture prior to sintering the mixture (column 10, lines 40-45).

With regard to claim 4, Adams et al teaches passing the sintered mixture through a cooling zone following the heating zone (column 9, lines 64-68).

With regard to claim 9, Eucker et al teaches drawing a vacuum on the mixture during the sintering step to extract air from the mixture (column 3, lines 8-10 and column 3, lines 53-57).

***Response to Arguments***

5. Applicant's arguments filed 3/14/05 have been fully considered but they are not persuasive.

6. Applicant argues that PTFE would not be properly combinable as a starting material with the process taught by Adams et al due to its low dielectric loss factor. However, the starting material combined with the process of Adams et al in the previous 35 USC §103a rejection is not PTFE alone, but instead is PTFE combined with graphite (Hori et al, column 1, lines 18-22). The applicant has not shown that PTFE combined with graphite has a dielectric loss factor that is lower than the limit contemplated by Adams et al. Furthermore, Adams et al teach that the starting materials may be polymers or polymer compositions (column 4, lines 22-25). PTFE combined with graphite qualifies as a polymer composition.

7. Applicant argues that graphite is volatile within the context of Adams et al. However, Adams et al do not teach that an additive such as graphite would be volatile nor does Adams et al teach away from using such additives.

8. Applicant argues that Adams et al select the starting material based on the dielectric properties favorable to dielectric heating. Assuming this to be true, applicant has not argued that PTFE combined with graphite would provide unfavorable dielectric heating properties. Applicant also argues that Adams et al select the starting material based on particle size. However, Adams et al teach that particle size is selected to enhance the mechanical strength of the finished product, and does not reference particle size with regard to dielectric properties (column 7, lines 23-27). Adams et al

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further teach that water is used to enhance the mechanical strength of the finished product (column 7, lines 54-65). Adams et al also teach that water enhances the transfer of heat to the starting material, but this teaching only serves to highlight the fact that it is known to include additives with polymers to increase the dielectric properties and does not teach away from using PTFE combined with graphite as a starting material.

### ***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David T. Beck whose telephone number is 571-272-2942. The examiner can normally be reached on Monday - Friday, 8AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on 517-272-1196. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DTB  
May 26, 2005

*DTB*



**MICHAEL P. COLAIANNI**  
**SUPERVISORY PATENT EXAMINER**